

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Delano-Earlimart Irrigation District and Rosedale-Rio Bravo Water Storage District Banking Program 2009-2026

EA-09-92



**U.S. Department of the Interior
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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

	Page
Section 1 Purpose and Need for Action.....	1
1.1 Background.....	1
1.2 Purpose and Need	1
1.3 Scope.....	2
1.4 Applicable Regulatory Requirements and Required Coordination	2
1.4.1 Central Valley Project Water Service Contracts.....	2
1.4.2 Contracts for Additional Storage and Delivery of Water	3
1.4.3 Water Quality Standards.....	3
1.5 Potential Issues.....	3
Section 2 Alternatives Including the Proposed Action.....	5
2.1 Alternative A: No Action.....	5
2.2 Alternative B: Proposed Action.....	5
Section 3 Affected Environment and Environmental Consequences	7
3.1 Water Resources	7
3.1.1 Affected Environment.....	7
3.1.1.1 Friant Division CVP Contractors.....	7
3.1.1.2 Non-CVP Contractors.....	8
3.1.1.3 Groundwater Resources	9
3.1.1.4 Conveyance Facilities and Rivers.....	10
3.1.2 Environmental Consequences.....	10
3.1.2.1 No Action.....	10
3.1.2.2 Proposed Action.....	11
3.2 Land Use	12
3.2.1 Affected Environment.....	12
3.2.2 Environmental Consequences.....	12
3.2.2.1 No Action.....	12
3.2.2.2 Proposed Action.....	12
3.3 Biological Resources	13
3.3.1 Affected Environment.....	13
3.3.2 Potentially Affected Listed Species	15
3.3.3 Environmental Consequences.....	16
3.3.3.1 No Action.....	16
3.3.3.2 Proposed Action.....	17
3.4 Cultural Resources	17
3.4.1 Affected Environment.....	17
3.4.2 Environmental Consequences.....	17
3.4.2.1 No Action.....	17
3.4.2.2 Proposed Action.....	17
3.5 Indian Trust Assets	18
3.5.1 Affected Environment.....	18
3.5.2 Environmental Consequences.....	18
3.5.2.1 No Action.....	18

3.5.2.2	Proposed Action.....	18
3.6	Socioeconomic Resources	18
3.6.1	Affected Environment.....	18
3.6.2	Environmental Consequences.....	19
3.6.2.1	No Action.....	19
3.6.2.2	Proposed Action.....	19
3.7	Environmental Justice	19
3.7.1	Affected Environment.....	19
3.7.2	Environmental Consequences.....	19
3.7.2.1	No Action.....	19
3.7.2.2	Proposed Action.....	19
3.8	Air Quality	20
3.8.1	Affected Environment.....	20
3.8.2	Environmental Consequences.....	20
3.8.2.1	No Action.....	20
3.8.2.2	Proposed Action.....	21
3.9	Cumulative Effects.....	21
Section 4	Consultation and Coordination	23
4.1	Fish and Wildlife Coordination Act (16 USC § 651 et seq.).....	23
4.2	Endangered Species Act (16 USC § 1531 et seq.).....	23
4.3	National Historic Preservation Act (16 USC § 470 et seq.)	23
4.4	Migratory Bird Treaty Act (16 USC § 703 et seq.)	23
4.5	Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands	24
Section 5	List of Preparers and Reviewers	25
Section 6	References.....	25

List of Acronyms and Abbreviations

AEWSD	Arvin Edison Water Storage District
af	acre-feet
af/y	acre-feet per year
APE	area of potential effects
CAA	Clean Air Act
cfs	cubic-feet per second
Conjunctive Use Program	RRBWSD's Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DEID	Delano-Earlimart Irrigation District
DWR	California State Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FWCA	Fish and Wildlife Coordination Act
ITA	Indian Trust Assets
KCWA	Kern County Water Agency
KTWD	Kern-Tulare Water District
MBTA	Migratory Bird Treaty Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
Reclamation	Bureau of Reclamation
RRBWSD	Rosedale-Rio Water Storage District
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SSJMUD	Southern San Joaquin Municipal Utility District
State	State of California
SWID	Shafter-Wasco Irrigation District
SWP	State Water Project
USFWS	U. S. Fish and Wildlife Service

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Section 1 Purpose and Need for Action

1.1 Background

The State of California (State) has historically experienced periods of drought and flooding. Water agencies continually strive to prepare for varying water supply conditions to the extent possible so that agricultural or urban water supply needs can be met regardless of the water availability conditions. The Central Valley is currently experiencing a dry year in 2009 and is coming off consecutive years of drought conditions in 2007 and 2008. In addition, the interim flows from the San Joaquin River Restoration Settlement are set to begin this year. In order to proactively offset the effects of limited Central Valley Project (CVP) contract supplies due to drought and increased releases from Friant Dam into the San Joaquin River, CVP contractors from the Friant Division need to pursue water management options in order to maximize the beneficial uses of its varied water resources. When available, this could be accomplished by having a variety of water supply options that can be implemented as needed. For instance, the ability to bank water supplies that exceed the current demand is one strategy that can be useful. The flexibility in the timing of delivery afforded by water banking would be advantageous to water agencies during the summer growing season when water demand is at its peak.

Delano-Earlimart Irrigation District

Delano-Earlimart Irrigation District (DEID) is located on the border between Tulare and Kern Counties on the eastern side of the San Joaquin Valley, approximately 10 miles from the Sierra Nevada foothills. In 1993, DEID purchased and developed an 80-acre parcel specifically used as a groundwater recharge basin. However, the district does not own or operate any groundwater banking or extraction facilities.

Rosedale-Rio Bravo Water Storage District

Rosedale-Rio Bravo Water Storage District (RRBWSD), located west of the City of Bakersfield, was established in 1959 to develop a groundwater recharge program to offset overdraft conditions in the regional Kern County aquifer. RRBWSD's Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program (Conjunctive Use Program) currently manages approximately 300,000 acre-feet (af) of stored groundwater in the underlying aquifer, which has an estimated total storage capacity in excess of 930,000 af. RRBWSD acquires water for its Conjunctive Use Program from the Kern River, the Friant-Kern Canal (FKC) when available, and the State Water Project (SWP) through a water supply contract with Kern County Water Agency (KCWA). RRBWSD certified a Final Master Environmental Impact Report covering the Conjunctive Use Program in July 2001.

1.2 Purpose and Need

DEID desires to maximize the beneficial use of its varied water resources by banking supplies that exceed the current demand to its immediate needs in RRBWSD on an annual basis. DEID needs to supplement its conjunctive use program, protect the groundwater resources within its service area, and mitigate possible contract water supply losses in future years due to drought and losses associated with the San Joaquin River Restoration Settlement legislation. The use of

CVP water for the purpose of groundwater banking outside the contract service area provides DEID with operational flexibility and facilitates better management of its CVP water supply.

By allowing DEID to use its banking facilities, RRBWSD would be able to help alleviate some of the groundwater overdraft conditions to the aquifer underlying its district by requiring that a portion of DEID's banked water remain in the aquifer.

1.3 Scope

This Environmental Assessment (EA) has been prepared to examine the impacts on environmental resources as a result of banking excess DEID Class 1 and Class 2 CVP water supplies, in addition to any available 215 Water (unstorable flood flows behind Friant Dam) in RRBWSD's existing water banking facilities for future return to DEID. The FKC, Cross Valley Canal (CVC), and other existing infrastructure would be utilized in order to convey the banked and return water.

The action area is located in the southeastern portion of the San Joaquin Valley, in southern Tulare County and parts of Kern County. Aside from DEID and RRBWSD, other agencies could be involved with the Proposed Action as possible exchange partners, such as: Arvin-Edison Water Storage District (AEWSD); Kern-Tulare Water District (KTWD); Shafter-Wasco Irrigation District (SWID); and Southern San Joaquin Municipal Utility District (SSJMUD). Refer to Figure 1 below for an overview map of the action area.

The banking program between DEID and RRBWSD would begin in 2009 and be in effect through DEID's long-term CVP contract which expires at the end of February 2026; therefore, the temporal scope of this EA would be for 18 years.

1.4 Applicable Regulatory Requirements and Required Coordination

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act analysis and decision-making process of this EA and include the following:

1.4.1 Central Valley Project Water Service Contracts

Section 3(d) of CVP Water Service Contracts identifies the use of CVP water outside the Contractors' service area. This section states that "Groundwater recharge programs, groundwater banking programs, surface water storage programs and other similar programs utilizing CVP water or other water furnished pursuant to the CVP contract conducted outside the Contractors' service area may be permitted upon written approval of the Contracting Officer, which approval will be based upon environmental documentation, CVP water rights, and CVP operation concerns. The Contracting Officer will address such concerns in regulations policies, or guidelines."

1.4.2 Contracts for Additional Storage and Delivery of Water

Central Valley Improvement Act (CVPIA) of 1992, Title 34 (of Public Law 102-575), Section 3408, Additional Authorities (c) authorizes the Secretary of the Interior to enter into contracts pursuant to Reclamation law and this title with any Federal agency, California water user or water agency, State agency, or private nonprofit organization for the exchange, impoundment, storage, carriage, and delivery of CVP and non-CVP water for domestic, municipal, industrial, fish and wildlife, and any other beneficial purpose, except that nothing in this subsection shall be deemed to supersede the provisions of section 103 of Public Law 99-546 (100 Stat. 3051).

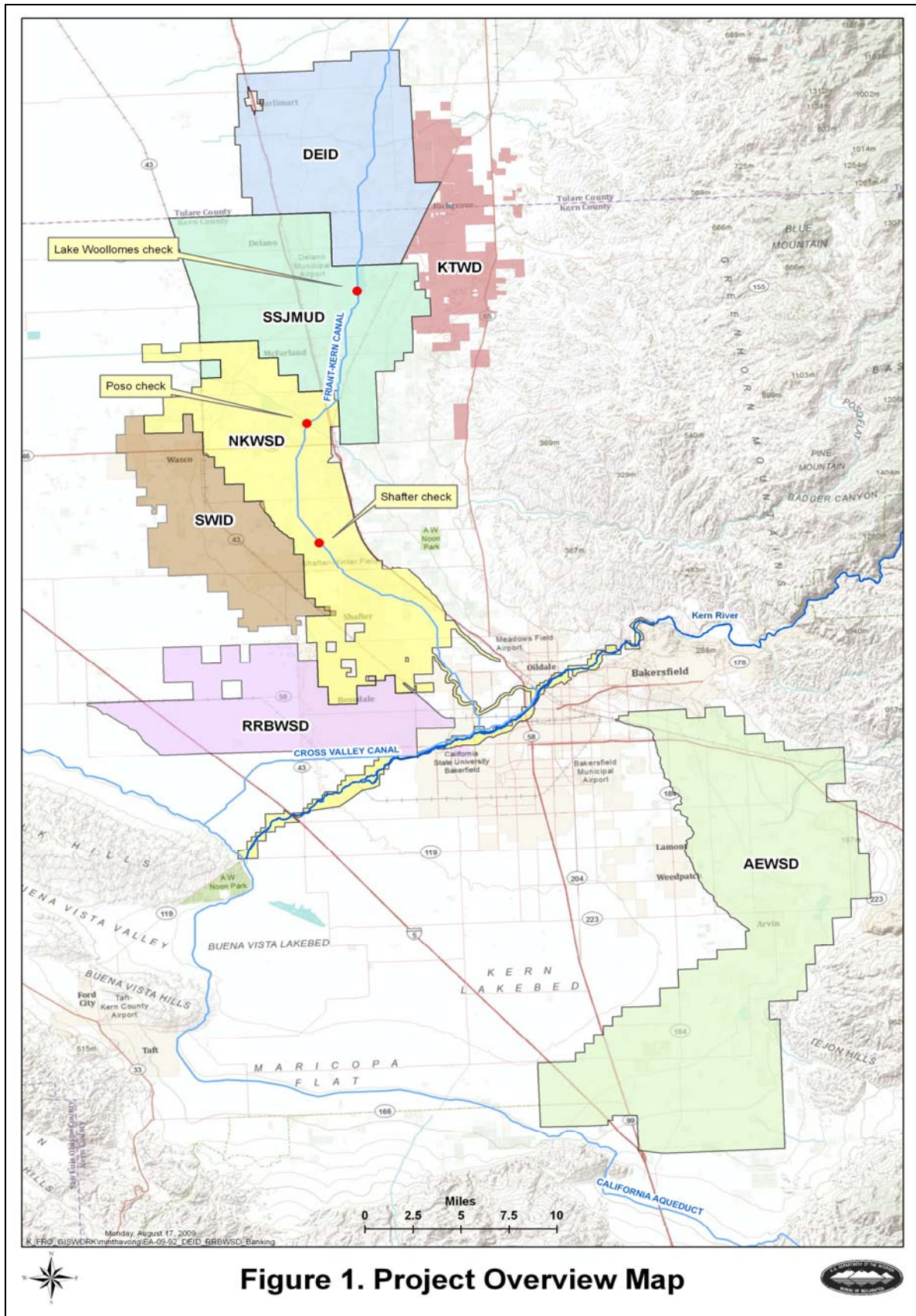
1.4.3 Water Quality Standards

The Bureau of Reclamation (Reclamation) requires that the operation and maintenance of CVP facilities shall be performed in such a manner as is practical to maintain the quality of raw water at the highest level that is reasonably attainable. Water quality and monitoring requirements are established annually by Reclamation and are instituted to protect water quality in Federal facilities by ensuring that imported (including non-CVP) water does not impair existing uses or negatively impact existing water quality conditions. These standards are updated periodically. The water quality standards are the maximum concentration of certain contaminants that may occur in each imported source of water. The water quality standards for imported water to be stored and conveyed in Federal facilities are currently those set out in Title 22 of the California Code of Regulations, which Reclamation has adopted and incorporated into their water quality monitoring requirements, *Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals*, (see Appendix A).

1.5 Potential Issues

The potentially affected resources in the project vicinity include:

- Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trusts Assets (ITA)
- Environmental Justice
- Socioeconomic Resources
- Air Quality
- Cumulative Impacts



Section 2 Alternatives Including the Proposed Action

2.1 Alternative A: No Action

Under the No Action Alternative, Reclamation would not approve DEID's delivery of its excess CVP supplies and available 215 Water to be banked in RRBWSD. DEID would not be able to maximize the benefits of its excess water by storing it in RRBWSD for future return and use during dry hydrological years.

2.2 Alternative B: Proposed Action

Under the Proposed Action, Reclamation would approve DEID's delivery of its Class 1 and Class 2 CVP supplies and 215 Water (when available) for banking outside of their service area boundary in RRBWSD. DEID would deliver up to 80,000 af per year (af/y) to RRBWSD for banking from November 2009 through February 2026. DEID would be allowed to store up to 100,000 af maximum at any one time, and RRBWSD would return up to 10,000 af/y, not to exceed 20 cubic-feet per second (cfs) without mutual consent, to DEID upon request. DEID's water would be delivered to RRBWSD by one or more of the following methods, all inclusive:

- FKC to CVC via the FKC/CVC Intertie or the AEWSD Intake Canal/CVC Intertie then to RRBWSD turnouts off of the CVC;
- FKC to Kern River (FKC terminates into the Kern River) and then to RRBWSD through its Kern River intake;
- DEID could also transfer a portion of its CVP supply to KTWD under the Accelerated Water Transfers Program (FONSI/EA-05-92 and 05-01), and in turn KTWD's balance of banked water in RRBWSD would be reduced and a like amount would be credited to DEID. This action would require prior Contracting Officer approval.
- The delivery of DEID water to RRBWSD could also be completed via exchanges that may include other districts or by other mutually agreeable points of diversion which may require additional environmental review if the mechanism differs from the above.

Banking by DEID within RRBWSD would be on an up to 2:1 ratio; where a 1:1 banking to delivery ratio would be "bucket for bucket", and a ratio of 2:1 would involve the return of 1 af to DEID for every 2 af of water banked in RRBWSD. A 1:1 exchange would involve the delivery of Class 1 and Class 2 CVP water supplies to be banked in RRBWSD, with a six to ten percent loss applied upon returning the banked water to DEID. For an up to 2:1 exchange, DEID intends to provide 215 Water to account for the remaining balance of the arrangement (1 af of the banked water would be CVP water and 215 Water would make up the rest of the up to 2 af). DEID has 215 Water available to them from time to time via the FKC. The 2:1 ratio would provide water supply benefits to both parties by allowing DEID to re-regulate water which is typically available at times when DEID is unable to use, capture and/or store the water. RRBWSD receives a groundwater benefit through the 1 af of water left by DEID for recharge purposes. In addition, the water left by DEID in the bank would be in-lieu of a capital charge

component in recognition of the investment made by RRBWSD in having developed the water banking facility.

Upon request, RRBWSD would use their three existing extraction wells to pump the banked water for return to DEID via the reverse mechanism as described above for the delivery of DEID water to RRBWSD, and/or one or more of the following methods, all inclusive:

- pumped into the CVC then into the AEWSD Intake Canal for exchange with AEWSD, in return, AEWSD would make available a like-amount of its CVP supply to DEID via the FKC; and
- pumped into the CVC then into the FKC; through an operational exchange facilitated by the Friant Water Authority (FWA), the water to be returned to DEID would be exchanged with AEWSD, KTWD, SWID, and other potential exchange partners with access to the FKC where a like-amount of CVP water would then be made available to DEID via the FKC (refer to Appendix B for DEID agreement with FWA for operational exchanges).
- After the return water is pumped into the CVC and then into the FKC, physical delivery of the water to DEID could be delivered through the use of pump-back facilities at three check structures (Shafter Check, Poso Check, and Lake Woollomes Check) located along the FKC. The use of pump-back facilities could also provide additional exchange opportunities (both direct and/or indirect via operational exchanges) with other districts having access to the FKC.
- RRBWSD could exchange some of their Kern River supplies to a CVP contractor with access to the Kern River, such as AEWSD or SWID, and in turn that district would make a like-amount of its CVP supply available to DEID from the FKC.
- RRBWSD could exchange some of its SWP supply with a CVP contractor having access to the CVC, such as AEWSD or SWID, and in turn that district would make a like-amount of its CVP water available to DEID from the FKC.
- RRBWSD could return the water to DEID by other mutually agreeable points of diversion through existing CVP and non-federal facilities and exchanged with other CVP or non-CVP contractors; which may be subject to additional environmental review should the return mechanism varies from what is analyzed above.

The Proposed Action would occur if and when capacity exists in the facilities involved with the banking program and the quality of such water during return is equal to or better than the water quality standards of Title 22. In addition, the following conditions would also apply:

- DEID's CVP water would be used by RRBWSD for recharge purposes within the Friant permitted place-of-use;
- no land conversions that would degrade the suitability of habitat for native fish and wildlife species shall be supported by the delivery of the banked or returned water;
- neither banked water or returned water would be used to place untitled or new lands into production in either DEID or RRBWSD; and
- the delivery and return of DEID's water would not impact the FKC and CVC and interfere with their respective ability to deliver water under normal operations;
- the banking program would not require the new construction or modification of any conveyance or diversion facilities.

Section 3 Affected Environment and Environmental Consequences

3.1 Water Resources

Climate change is an environmental trend and for the purpose of this EA refers to changes in global or regional climate over time and is expected to have some effect on the snow pack of the Sierra Nevada and the run-off regime. Current data are not yet clear on the hydrologic changes and how they will affect the Friant Division of the CVP as well as other federal, state and local river operations within the action area. Water allocations are made dependent on hydrologic conditions and environmental requirements. Since operations and allocations are flexible, any changes in hydrologic conditions due to climate change would be within the respective operations' flexibility and therefore water resource changes due to climate change would be the same with or without the Proposed Action.

3.1.1 Affected Environment

3.1.1.1 *Friant Division CVP Contractors*

Arvin-Edison Water Storage District AEWS has a contract with Reclamation for 40,000 af/y of Class 1 and 311,675 af/y of Class 2 CVP supplies. The Class 2 supply comprises a large fraction of their contract allocation; however, this supply is variable. The district manages this supply by using an underlying groundwater reservoir to regulate water availability and to stabilize water reliability by percolating water through three spreading basins. AEWS takes Friant CVP water from their Intake Canal located at the terminus of the FKC and serves landowners within its district through 45 miles of lined canals and 170 miles of pipeline.

In addition, AEWS engages in Article 5 exchanges of CVP water with Cross Valley contractors, such as KTWD. Up to 66,096 af/y of the Cross Valley contractors' CVP water is delivered to AEWS. The water is diverted from the Sacramento-San Joaquin River Delta through the California Aqueduct and to the CVC. In exchange, the Friant CVP water that would have flowed down the FKC to AEWS is taken upstream by a Cross Valley contractor off of the FKC. Up to 70,984 af/y of Friant CVP water is delivered to the Cross Valley contractors.

Delano-Earlimart Irrigation District DEID delivers surface water from the CVP to approximately 400 landowners on 56,500 acres of land in southern Tulare County and northern Kern County through a completely piped system. Farmers within DEID pump groundwater from private wells when surface water is not available to meet irrigation needs. DEID serves agricultural water supplies only. On March 1, 2001 DEID entered into a long-term renewable contract with Reclamation for 108,800 af/y of Class 1 and 574,500 af/y of Class 2 CVP water. DEID obtains its CVP water from its turnouts located off the FKC and delivers water to their customers through 172 miles of pipeline. In addition, DEID enters into annual contracts with Reclamation for 215 Water when available.

Kern-Tulare Water District KTWD depends on surface water delivery for the production of perennial crops. The district serves roughly 19,000 acres of irrigated farmland. KTWD has a CVP contract for 53,300 af/y with Reclamation. KTWD serves only agricultural water to their customers. The district's facilities consist of 12 pumping plants, four reservoirs, and roughly 65 miles of pressure pipeline to deliver water to their customers upslope of the FKC. Currently, 91 percent of all crops in KTWD are irrigated with the micro-sprinkler irrigation method, which is very efficient and does not require any spill or tailwater recovery systems.

KTWD is a Cross Valley contractor within the Friant Division of the CVP, so its supplies are physically delivered from the Sacramento-San Joaquin River Delta. Due to their physical locality, KTWD would have to reverse pump their water up the FKC or enter into Article 5 exchanges with AEWSO for Friant CVP water off of the FKC.

In addition, they also have a contract with the City of Bakersfield for roughly 23,000 af/y of Kern River water. As with their CVP supplies, the only way for KTWD to get their Kern River water is through exchanges and/or transfers with a CVP contractor with access to the Kern River (such as AEWSO or SWID) for Friant CVP water, or by reverse pumping up the FKC under a Warren Act contract.

Shafter-Wasco Irrigation District SWID has a contract with Reclamation for 50,000 af/y of Class 1 and 39,600 af/y of Class 2 CVP water from the Friant Division. The district does not have any other long-term sources of surface water supplies and only provides water for agriculture to its customers. SWID obtains its CVP water from two turnouts off of the FKC at mileposts 134.4 and 137.2. SWID's distribution system is 0.3 miles of lined canals and 117 miles of pipeline. SWID does not own or operate any water storage facilities or groundwater extraction facilities. Landowners pump groundwater to make up any shortfalls if SWID can not provide sufficient surface water supplies.

Southern San Joaquin Municipal Utility District SSJMUD has a contract with Reclamation for 97,000 af/y of Class 1 and 50,000 af/y of Class 2 CVP water from the Friant Division. The district does not have any other long-term surface water supplies. SSJMUD obtains its CVP water from nine diversion points off of the FKC between mileposts 119.6 and 130.4. The district's distribution system is comprised of 158 miles of pipeline. In addition, SSJMUD operates eleven regulating reservoirs that provide groundwater recharge; however, the district does not own or operate any groundwater extraction facilities. Landowners within the district resort to groundwater pumping during times where SSJMUD can not provide adequate surface water supplies.

3.1.1.2 Non-CVP Contractors

Rosedale-Rio Bravo Water Storage District RRBWSD is a SWP contractor and member unit of the KCWA. The district does not provide any municipal and industrial water to customers within its service area and irrigation water used within the district is presently supplied from landowner wells pumping from the groundwater basin. RRBWSD owns and operates over 2,000 acres of recharge ponds capable of recharging up to 600 cfs. RRBWSD manages the portion of the regional Kern County groundwater subbasin that is within its boundaries.

RRBWSD acquires water for recharge purposes from the Kern River through a water service agreement with the City of Bakersfield, water from the FKC as available, and from the SWP through a water service contract with the KCWA, which holds a master contract with the State Department of Water Resources (DWR). All of the water received by RRBWSD is used for groundwater replenishment in established recharge basins within its service area.

3.1.1.3 Groundwater Resources

The project area overlies the Tule and Kern County Groundwater Subbasins of the San Joaquin Valley Basin, and confined within the Tulare Lake Hydrologic Region. In general, groundwater quality throughout the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high nitrate, arsenic, and organic compounds (DWR, 2005).

Tule Groundwater Subbasin DEID is located almost entirely within the Tule Groundwater Subbasin, which covers a surface area of approximately 467,000 acres and spans across Tulare County. Changes in the Tule Groundwater Subbasin level is evaluated by DWR by quarter township and computed through a custom DWR computer program using geostatistics, also known as kriging. On average, the subbasin water level has increased by four feet total from 1970 through 2000 (DWR, 2005). Groundwater recharge is primarily from stream recharge (White River, Tule River, and Deer Creek) and from deep percolation of applied irrigation water (DWR, 2005).

Groundwater levels underlying DEID have gradually stabilized since importation of surface water supplies. The drought period between 1987 through 1993 was an example for the need to have a conjunctive use program in the DEID area, as growers were forced to rely mostly on groundwater. In that seven year span, the average depth to groundwater dropped 27 feet (Brogan, 2006). Currently, about 22 percent of the applied irrigation requirements within DEID are met by water users pumping from the groundwater basin. The total amount pumped for agricultural use varies according to the amount of surface water available. There are about 200 wells located throughout DEID all owned by private landowners (DEID, 2003).

Kern County Groundwater Subbasin RRBWSD is located within the Kern County Groundwater Subbasin, which has a surface area of approximately 1,945,000 acres. Review of the subbasin indicate that except for seasonal variation resulting from recharge and pumping, the groundwater levels wells have remained relatively unchanged from 1970 to 2000 (DWR, 2006). However, the Kern County Groundwater Subbasin has been identified by DWR as being critically overdrafted. By definition, “a basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economical impacts (Reclamation, 2005).”

Natural recharge is primarily from stream seepage along the eastern subbasin and the Kern River; recharge of applied irrigation water, however, is the largest contributor (DWR, 2006). In addition to other water providers in the Kern County, RRBWSD adopted an AB 3030 water management plan in 1994 to help offset overdraft conditions in the county.

3.1.1.4 Conveyance Facilities and Rivers

Cross Valley Canal The CVC, a locally-financed facility completed in 1975, extends from the California Aqueduct near Tupman to Bakersfield. It consists of four reaches which have capacities ranging from 890 cfs through the first two pumping plants to 342 cfs in the unlined extension near Bakersfield. The CVC is a joint-use facility operated by the KCWA that could convey water from the CVC to the Kern Water Bank, the City of Bakersfield, the Berrenda Mesa Property, the Kern River channel, the Pioneer Banking project and to the various member units of KCWA (which RRBWSD is a member).

Friant-Kern Canal The FKC carries water over 151.8 miles in a southerly direction from Friant Dam to its terminus at the Kern River, four miles west of Bakersfield. The FKC has an initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River (Reclamation, 2009). The water conveyed in the FKC is from the San Joaquin River and is considered to be of good quality because it originates from the Sierra Nevada. The water is used for municipal and industrial, and agricultural purposes in Fresno, Tulare, and Kern Counties. The FKC is a part of the CVP, which annually delivers about seven million AF of water for agricultural, urban, and wildlife use.

Kern River The Kern River is about 165 miles long and is the southernmost river in the San Joaquin Valley. The river originates from the Sierra Nevada mountains on the eastern side of Tulare County and terminates on the west side of Kern County where it is mainly diverted for local water supplies. When the Kern River enters Kern County, it deposits into Lake Isabella created as a result of Isabella Dam. Below the dam, the river is highly diverted through a series of canals to irrigate farms in the southern San Joaquin Valley and provide municipal water supplies to the City of Bakersfield and surrounding areas. The Kern River is one of the few rivers in the Central Valley which does not contribute water to the CVP; however, the FKC joins the river approximately four miles west of downtown Bakersfield.

3.1.2 Environmental Consequences

3.1.2.1 No Action

Under the No Action Alternative, Reclamation would not approve the banking program between DEID and RRBWD, and surface water supplies would be the same as existing conditions described above in the affected environment. There would be no impacts to surface water resources, water quality, conveyance facilities, or the Kern River as conditions would remain the same as existing conditions.

There may be minor impacts to the Tule Groundwater Subbasin level as compared to the baseline since landowners in DEID would likely continue to rely on groundwater as in the past; the amount pumped would vary with the fluctuating availability of surface water supplies. DEID could engage in exchanges and banking programs with other agencies in order to regulate the timing of their water supplies; however, the scope of this EA does not cover those actions and may be subject to additional environmental analysis. Without the Proposed Action, the Kern County Groundwater Subbasin underlying RRBWSD would not benefit from the potential recharge left behind as a result of the banking program but would otherwise not be impacted.

3.1.2.2 Proposed Action

The ancillary districts involved with the return of DEID's water via direct or indirect exchanges merely represent an avenue for which to possibly complete the banking program. Those districts would not experience any loss or gain in water supply that would impact their respective water resources. All waters introduced and conveyed through the FKC must meet Reclamation water quality standards. If through monitoring the water pumped from one or more of RRBWSD's extraction wells fail to meet the criteria for discharging groundwater into either the CVC and subsequently into the FKC, the water from that well would not be allowed to be introduced into either facility until subsequent testing have demonstrated that the water quality has been met by the criteria as outlined in Title 22. Likewise, the same water quality requirements would need to be met before any waters involved with the Proposed Action is diverted into the Kern River. Therefore, there would be no significant adverse impacts to water quality as a result of the Proposed Action.

The Proposed Action would not interfere with the normal operations of any district involved with the banking program, nor would it impede any SWP or CVP obligations to deliver water to other contractors or to local fish and wildlife habitat. The KCWA and FWA manage the CVC and FKC, respectively, in a manner such that the normal operations and functions of the canals would not be hindered to the extent possible. The delivery and extraction of the waters involved with the Proposed Action would occur during times when Reclamation and/or the FWA determines that there is excess capacity, and the KCWA similarly determining that the CVC would be able to accommodate the extra water. The capacity of the conveyance facilities would not change such that water service or delivery obligations for either canal would continue as in the past. Most likely, the delivery of water to be banked would occur during the months after the peak irrigation demand has subsided. Similarly, the Rivermaster would have to determine that there is excess capacity before any waters involved with the Proposed Action is introduced into the Kern River. The implementation of the banking program between DEID and RRBWSD would not have significant impacts on the conveyance facilities and surface water resources.

With the ability to reregulate its water supplies by controlling the timing of delivery, the Proposed Action would provide DEID with surface water reliability and likely decrease reliance on groundwater pumping by its landowners during drought years. The Proposed Action would result in a net increase in groundwater levels since more water would be delivered to the groundwater subbasin underlying RRBWSD than would have occurred absent the project. A six to ten percent loss to the underlying subbasin would be applied for a 1:1 exchange, and 1 af of DEID's banked water would remain in the bank for recharge purposes for every 2 af of water that is banked by RRBWSD. There would not be any depletion of groundwater supplies nor interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. The banking program could result in a net increase in the Tule and Kern County Groundwater Subbasin levels underlying DEID and RRBWSD; therefore, the Proposed Action could have a beneficial impact on groundwater resources.

3.2 Land Use

3.2.1 Affected Environment

The ancillary districts involved with the delivery and/or return of DEID's water via direct or indirect exchange merely represents an avenue for which to possibly complete the banking program. Those districts would not experience any loss or gain in water supply that would impact their respective land uses. In addition, no modifications to existing facilities or new construction would be required as a result of the Proposed Action; therefore no impacts to land use would occur in AEWS, KTWD, SWID and SSJMUD, and further detailed environmental analysis is not included in this section.

DEID and RRBWSD are approximately 40-50 miles east of the Coast Range and approximately 12 miles west of the Sierra Nevada Mountain Range. The lands comprising the action area are predominantly agricultural with the majority being prime agricultural lands. Agriculture in the area includes permanent and row crops, dairies, and fruit orchards, most of which rely heavily on a combination of groundwater and surface water resources to support irrigation demands.

Delano-Earlimart Irrigation District

DEID serves only agricultural water to over 400 landowners, with an average farm size of 135 acres. Virtually all of the acreage in DEID has been developed. DEID is composed of approximately 56,474 acres, of which 46,581 are irrigated. Approximately 83 percent of DEID is planted to permanent crops, the most prevalent crop being grapes. Other permanent crops include pistachios, almonds, and various tree fruit.

Rosedale-Rio Bravo Water Storage District

RRBWSD, located west of Bakersfield, is roughly 43,000 acres in size, serving 33,400 acres of irrigated croplands. Approximately 85 percent of RRBWSD's service area is farmed to alfalfa hay, almonds, grain, cotton, and corn. RRBWSD also has about 6,000 acres developed for urban uses.

3.2.2 Environmental Consequences

3.2.2.1 No Action

No changes to land use would occur in DEID and RRBWSD under the No Action Alternative and conditions would likely remain the same as existing conditions as described above in the affected environment. Impacts to crops in DEID could occur without supplemental water during dry hydrological years, but the overall land use would be within historical conditions. DEID and RRBWSD could construct new facilities in order to proceed with their banking program to not include CVP water and/or federal facilities; however, construction would likely not be feasible and the construction of new facilities is outside the scope of this EA.

3.2.2.2 Proposed Action

DEID's water to be banked would be reregulated through RRBWSD's existing banking facilities and would not require the modification or construction of new conveyance facilities. The project would not induce the construction of any new homes or businesses, or road extensions or other new infrastructure. The Proposed Action would maintain agricultural lands by providing reliable water during dry years to DEID. The Proposed Action would not result in increased or

decreased water supplies in DEID or NKWSD that would induce growth or land use changes as both districts are fully built out and supply no water to customers other than agricultural users. There would be no adverse impacts from the Proposed Action as land use would remain the same as described in the affected environment.

3.3 Biological Resources

3.3.1 Affected Environment

By the mid-1940s, most of the valley's native habitat had been altered by man, and as a result, was severely degraded or destroyed. Approximately 86 percent of the estimated four million acres of native wetlands in the Central Valley was converted to urban and agricultural uses between 1850 and 1985 (USFWS, 1989). When the CVP began operations, over 30 percent of all natural habitats in the Central Valley and surrounding foothills had been converted to urban and agricultural land use (Reclamation, 1999).

Prior to widespread agriculture, land within the Proposed Action area provided habitat for a variety of plants and animals. With the advent of irrigated agriculture and urban development over the last 100 years, many species have become threatened and endangered because of habitat loss. Of the approximately 5.6 million acres of valley grasslands and San Joaquin saltbrush scrub, the primary natural habitats across the valley, less than 10 percent remains today. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable populations (Reclamation, 2001). The project area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants.

The following list (see Table 1) was obtained on Aug. 20, 2009 (Document # 090820034632), by accessing the U.S. Fish and Wildlife Service (USFWS) Database:

http://www.fws.gov/sacramento/es/spp_list.htm. The list is for the following U.S. Geological Survey quadrangles, which overlapped the districts in the DEID, SWID, AEWSD, KTWD, SSJMUD, and RRBWSD: Bear Mountain, Arvin, Weed Patch, Mettler, Tejon Hills, Coal Oil Canyon, Bena, Lamont, Edison, Oildale, Rosedale, Stevens, Gosford, Rio Bravo, Buttonwillow, East Elk Hills, Tupman, Deepwell Ranch, Mcfarland, Famoso, North Of Oildale, Pond, Wasco Nw, Wasco Sw, Wasco, Ducor, Sausalito School, Delano East, Richgrove, Pixley, and Delano West.

Table. 1. Special status species that could potentially occur within affected area.

<u><i>Species</i></u>	<u><i>Status</i>¹</u>	<u><i>Effects</i>²</u>	<u><i>Occurrence in the Study Area</i>³</u>
Amphibians			
California red-legged frog (<i>Rana aurora draytonii</i>)	T	NE	Absent. No individuals or habitat in area of effect.
Birds			
western burrowing owl (<i>Athene cunicularia hypugaea</i>)	MB	NE	Present. CNDDB ⁴ records indicate species occurs in the project area. No new construction or modification of existing facilities.

California condor (<i>Gymnogyps californianus</i>)	E, X	NE	Possible. Will forage up to 200km from roost/nest. There are records for this species less than 10 miles from project area. No construction of new facilities; no conversion of lands from existing uses.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	E	NE	Absent. No individuals or habitat in area of effect.
southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	E, X	NE	Absent. No individuals and does not occur on cultivated fields.
western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	T	NE	Absent. No individuals or habitat in area of effect.
Fish			
delta smelt (<i>Hypomesus transpacificus</i>)	T	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Invertebrates			
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E	NE	Absent. No individuals or habitat in area of effect.
valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T	NE	Present. CNDDDB records indicate species occurs along Kern river within NKWSD. No conversion of lands from existing uses or removal of elderberry bushes.
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T, X	NE	Absent. No individuals or habitat in area of effect.
Mammals			
Buena Vista Lake shrew (<i>Sorex ornatus relictus</i>)	E, X	NE	Present. CNDDDB records indicate species along Kern river within NKWSD. No construction of new facilities; no conversion of lands from existing uses.
Tipton kangaroo rat (<i>Dipodomys nitratoideus exilis</i>)	E	NE	Present. CNDDDB records indicate species occurs in project area. No new construction or modification of existing facilities.
giant kangaroo rat (<i>Dipodomys ingens</i>)	E	NE	Absent. No individuals or habitat in area of effect.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	NE	Present. CNDDDB records indicate this species occurs in the project area. No construction of new facilities; no conversion of lands from existing uses.
Plant			
Bakersfield cactus (<i>Opuntia treleasei</i>)	E	NE	Present. CNDDDB records indicate species along Kern river within NKWSD and northern portion of AEWS. No construction of new facilities; no conversion of lands from existing uses.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	T	NE	Absent. CNDDDB records indicate this species is extirpated from the project area.
Kern mallow (<i>Eremalche kernensis</i>)	E	NE	Absent. No individuals or habitat in area of effect.
San Joaquin woolly-threads (<i>Monolopia congdonii</i>)	E	NE	Present. Records do occur at the Project Area. No construction of new facilities; no conversion of lands from existing uses.
Reptiles			
blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	NE	Present. Documented as extant in project area, but no conversion of native lands or lands

			fallowed and untilled for three years or more, no new facilities.
giant garter snake (<i>Thamnophis</i> <i>gigas</i>)	T	NE	Absent. Presumed extirpated from southern San Joaquin valley (Hansen and Brode 1980).

1 Status= Listing of Federally special status species, unless otherwise indicated

E: Listed as Endangered

MB: Those species protected by the Migratory Bird Treaty Act

T: Listed as Threatened

X: Critical Habitat designated for this species

2 Effects = NE = No Effect determination.

3 Definition Of Occurrence Indicators

Present: Species observed in area

Possible: Species no observed at least in the last 10 years

Absent: Species not observed in study area and habitat requirements not met

4 CNDDDB = California Natural Diversity Database 2009

3.3.2 Potentially Affected Listed Species

Western burrowing owls are a year long residence protected under the Migratory Bird Treaty Act. Their habitat consists of open dry annual and perennial grasslands, agricultural and range lands, deserts, and scrubland containing low growing shrubs. They are active day and night and eat insects and small mammals (Klute et al., 2003). For shelter, owl will use burrows made by fossorial mammals. Breeding season is from February 1st through August 31st (Klute et al. 2003).

The California condor is one of the largest and rarest birds in the world (USFWS, 1996). By the early 1980s, their range largely became restricted to the foothill and mountain rangeland and forest habitat of the southern rim of the San Joaquin Valley; including San Luis Obispo, northern Los Angeles County, to Tulare County in western Sierra Nevada (USFWS 1996). These opportunistic scavengers feed socially and roost communally. California condor will nest in the cavity of rocks or tree trunks often near foraging grounds located in foothills and grasslands (USFWS 1996). Mated pairs will forage near roost and breeding sites (20 miles away) while immature and unpaired adults have been found foraging over 124 miles (Meretsky and Snyder, 1992).

The valley elderberry longhorn beetle is endemic to the California Central Valley. They occur in riparian environments that border upland habitats containing their host plant, elderberry (*Sambucus spp.*). It has been estimated that less than one percent of their native habitat remains (Collinge et al., 2001). Adults will feed on foliage of the elderberry bush between March through early June. Following mating, the female beetle will lay eggs in the cracks of living elderberry bush. After larvae emerge, they will burrow inside the pith of the plant and continue to develop for 1 to 2 years. Prior to pupation, the larvae will burrow an exit whole in the stem of the bush then pack the hole with frass. Following metamorphosis, the adult will emerge from the pupal chamber between middle of March through June (Barr, 2001).

The Buena Vista Lake shrew is an insectivore endemic to Kern County, California. They occur in riparian or wetland communities containing dense leaf litter or low growing herbaceous cover that retain sufficient moisture, provide cover and prey (USFWS, 2002). They are active day or

night foraging for food but often will go unnoticed due to their cryptic behavior. Breeding activity begins by February or March and terminates with the onset of the dry season (USFWS 2002).

Tipton kangaroo rats are predominately a seed eater but will supplement their diet with herbaceous shrubs and insects. They construct their dens in open level habitat along the base of shrubs, fences, and canal embankments (USFWS, 1988). The mating season begins in the winter and last till early April. Kangaroo rats are highly susceptible to flooding which can spoil their seed cache or even cause drowning (USFWS 1988).

San Joaquin kit foxes inhabit grasslands and scrublands, many of which have been extensively modified. Types of modified habitats include those with oil exploration and extraction equipment, wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands (USFWS, 1998; Warrick et al., 2007), which are a common habitat in the project area. Diet consists of small mammals, insects, birds, and vegetation (USFWS 1998). At one year of age, kit foxes can become sexually active. Breeding occurs between December and March. Young will venture out on their own around August to September (USFWS 1998).

Bakersfield cactus is a low growing perennial that flowers in May and are found in sandy to sandy-loam soils of Kern County in highly fragmented populations (USFWS, 1990). They occur on flood plains, along bluffs and rolling hills in alkali saltbrush scrub plant communities. Much of the life history of this cactus is still not known (USFWS 1988).

San Joaquin woolly-threads are an annual herb. During periods of low precipitation, woolly-threads will produce few seeds that tend to germinate from November till January (USFWS 1988). The plants will flower from February till May then all signs of this plant tend to disappear. The methods of seed dispersal are currently unknown (USFWS 1988).

Blunt-nosed leopard lizards live in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. They inhabit non-native grassland and alkali sink scrub communities of the Valley floor marked by poorly drained, alkaline, and saline soils (Montanucci 1965). These lizards will use small mammal burrows for permanent shelter and dormancy or can construct shallow tunnels under exposed rocks or earth berms for temporary shelter (Warrick et al., 1998). They will eat insects, other lizards, and some plant material. The breeding season occurs at the end of April till early June (USFWS 1998).

3.3.3 Environmental Consequences

3.3.3.1 No Action

Under the No Action Alternative there would be no impacts to wildlife and special status species, as no new facilities would be constructed and existing deliveries would continue as has historically occurred. The conditions of special status wildlife species and habitats under the No Action Alternative would be the same as they would be under existing conditions described in the Affected Environment; therefore, no additional effects to special status species or critical habitats are associated with this alternative.

3.3.3.2 Proposed Action

Under the proposed action alternative, Reclamation would approve DEID's excess water supplies for conveyance in existing facilities to RRBWSD for banking. Water demands and conditions in the project area would not change and no new facilities would be constructed, and therefore, there would be no direct effects on listed species or designated critical habitat. The proposed water conveyance would not involve the conversion of any land and would therefore not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species or birds protected by the Migratory Bird Treaty Act (MBTA). Since no natural stream courses alteration would occur, there would be no effects on listed fish species.

3.4 Cultural Resources

3.4.1 Affected Environment

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.4.2 Environmental Consequences

3.4.2.1 No Action

Under the No Action Alternative, there would be no impacts to cultural resources since there would be no modifications to existing conveyance systems and no new construction that would result in any ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

3.4.2.2 Proposed Action

Similar to the No Action Alternative, there would be no new ground disturbance and the banking program would be accomplished using existing facilities. No new lands would be put into agricultural production as a result of the banking program. The Proposed Action involves the type of activity that has no potential to affect historic properties.

3.5 Indian Trust Assets

3.5.1 Affected Environment

ITA are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA can not be sold, leased or otherwise alienated without the United States’ approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order. The nearest ITA is the Tule River Reservation approximately 23 northeast of the project location.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative, Reclamation would not approve of the banking program between DEID and RRBWSD. Conditions would remain the same as existing conditions; therefore, there would be no impacts to ITA.

3.5.2.2 Proposed Action

Approval of the banking program between DEID and RRBWSD would not involve any construction and would utilize existing conveyance facilities; therefore, activities associated with the Proposed Action would not affect ITA.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

The socioeconomic setting is dependent upon population, employment, housing, and revenues earned by the primary private employers. Kern County’s economy is based on diverse assests of agriculture, oil, aerospace, transportation, and warehousing services. The area located within DEID and RRBWSD is primarily rural agricultural land which provides farm-related jobs. There are small businesses that support agriculture, for example: feed and fertilizer sales, machinery sales and service, pesticide applicators, transport, packaging, marketing, etc. within the surrounding area.

3.6.2 Environmental Consequences

3.6.2.1 No Action

The No Action Alternative would have no impact on socioeconomic resources. Respectively, RRBWSD and DEID could continue to engage in water banking opportunities and/or exchanges that do not involve Federal facilities and/or CVP water. The socioeconomic conditions in both districts would be within historical settings.

3.6.2.2 Proposed Action

The Proposed Action would provide water supply reliability to DEID that would help to sustain existing croplands. Businesses and farm workers rely on these crops to maintain jobs. Conditions would remain the same as existing conditions and there would be no impacts to socioeconomic resources. The Proposed Action would continue to support the economic vitality in the region; therefore, there would be no impacts to socioeconomic resources.

3.7 Environmental Justice

3.7.1 Affected Environment

The February 11, 1994 Executive Order 12898 requires federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, into the San Joaquin Valley. Agriculture and related businesses are the main industry in DEID and RRBWSD, which provides employment opportunities for these minority and/or disadvantaged populations. The areas around the districts have stable economies based on local tomato, cereal, citrus, olive, and walnut products.

3.7.2 Environmental Consequences

3.7.2.1 No Action

The No Action Alternative would result in conditions remaining the same as existing conditions in both DEID and RRBWSD. The No Action Alternative would not result in any adverse effects unique to minority or low-income populations in the affected area.

3.7.2.2 Proposed Action

Under the Proposed Action, the ability to manage its varied water resources would help maintain agricultural production and local employment in DEID. The Proposed Action would not affect low-income or disadvantaged populations within the districts by not causing dislocation, changes in employment, or increase flood, drought, or disease. There would be no changes to existing conditions. Employment opportunities for low-income wage earners and minority population groups would be within historical conditions. Disadvantaged populations would not be subject to disproportionate impacts.

The Proposed Action does not propose any features that would result in adverse human health or environmental effects, have any physical effects on minority or low-income populations, and/or alter socioeconomic conditions of populations that reside or work in the vicinity of the Proposed Action.

3.8 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain de minimis amounts thus requiring the federal agency to make a determination of general conformity.

3.8.1 Affected Environment

The project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet State and Federal health-based air quality standards. The governing body over the SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB. The following de minimis amounts for the region covering the project area within the SJVAB are presented in Table 2 below:

Table 2. San Joaquin Valley Air Basin General Conformity de minimis Thresholds			
Pollutant	Federal Status	de minimis (Tons/year)	de minimis (Pounds/day)
VOC/ROG (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	274
NO _x (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	274
PM ₁₀	Attainment Maintenance	100	548
CO	Attainment Unclassified	100	548

Sources SJVAPCD 2009; 40 CFR 93.153

3.8.2 Environmental Consequences

3.8.2.1 No Action

Under the No Action Alternative, NKWSD would continue to engage in banking opportunities and exchanges to maximize management of their water supply within the facilities available to them either in district or utilizing other district's facilities as approved by Reclamation and

DWR. DEID would continue to engage in transfers and exchanges with other agencies to help reduce the impacts of critical dry year shortages. Conditions would be the same as the existing conditions; therefore, no additional impacts are associated with this alternative.

3.8.2.2 Proposed Action

Under the Proposed Action, movement of water between DEID, RRBWSD, and other potential exchange partners would be done via gravity flow and/or pumped using electric motors which have no emissions. In addition, extraction of banked groundwater from RRBWSD's three extraction wells would be pumped using electric motors which do not emit emissions that would contribute to air quality impacts. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical motors and therefore a conformity analysis is not required under the CAA and there would be no impact on air quality. The Proposed Action would not involve any construction or land disturbing activities that could lead to fugitive dust emissions and/or exhaust emissions associated with the operations of heavy machinery.

In the event that reverse pumping in the FKC is required to return banked water to DEID, a portable diesel pump at each of the three check structures would be required to perform such actions. If all three diesel pumps were utilized to reverse pump all 10,000 af/y of the return water back to DEID, its total emissions would still be well below the de minimus thresholds for the SJVAB; therefore, there would be no air quality impacts associated with this project.

3.9 Cumulative Effects

Other similar projects currently taking place within the vicinity of the Proposed Action are:

- *FONSI/EA-05-01 Kern-Tulare Water District and Rag Gulch Water District Groundwater Banking Project in Rosedale-Rio Bravo Water Storage District.* KTWD entered into a 25-year banking and exchange program with RRBWSD. Under this project, up to 40,000 af/y of KTWD's water will be banked in RRBWSD and up to 9,000 af/y will be returned to KTWD for use at a later date upon request. The exchange for this project is on a 2 to 0.96 ratio.
- DEID is also currently involved in a banking program, which consists of banking up to 30,000 af/y of its CVP water in North Kern Water Storage District for future return of up to 15,000 af/y upon request. The project will take place until February 2026 and was analyzed in *FONSI/SEA-09-74 Amendment to the Storage and Exchange of Central Valley Project Water Delano-Earlimart Irrigation District to North Kern Water Storage District.*

Reclamation's action is the approval to bank DEID's Class 1 and Class 2 CVP supplies and 215 Water in RRBWSD via existing facilities. The use of this water upon return to DEID would be to maintain and grow crops on existing agricultural lands. No native or previously untitled lands would be put into production. The Proposed Action would maintain existing land uses and would not contribute to cumulative changes or impacts to land uses or planning. Land use trends around the action area in recent years have resulted in urbanization of agricultural lands. This

trend is typically caused by economic pressures and is likely to continue with or without these water service actions. Therefore, there would be no cumulative effects to land use as a result of the Proposed Action.

The groundwater extraction wells involved with this project are located within RRBWSD's existing banking facilities and would not interfere with any private wells. RRBWSD has been banking groundwater for in-district use for over 40 years. Groundwater levels in the area would also slightly increase since some of the water banked would be left behind for recharge purposes in addition to a 6 to 10 percent of DEID's balance would be deducted for water loss to the basin as a result of storage. In addition, the groundwater level underlying DEID could experience a beneficial cumulative impact over the course of this project because landowners in DEID would need to rely less on groundwater pumping during dry years. The Proposed Action when added to other similar current and proposed actions may result in beneficial cumulative impacts to the groundwater on a small scale.

Although the Proposed Action itself has no adverse impacts on air quality, it may contribute to cumulative impacts on those resources when considering all pumping actions within the area. However, not all pumping can be done at the same time due to limitations of the pumps. Emissions calculated for the project are based on the worst possible engines and the longest runtime needed and are still below the de minimis thresholds. It is likely that the Proposed Action, when combined with other similar actions within the SJVAB, would still be well below the de minimis thresholds and would therefore have no cumulative effects.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies and this drives requests for water service actions such as water banking. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval. Due to the general nature of water banking, the project would have no adverse impacts that are individually limited, but cumulatively considerable.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action does not involve federal water development projects. Therefore the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action would not affect any Federally proposed or listed species or any proposed or designated critical habitat. Therefore, no consultation is required with either the USFWS or the National Marine Fisheries Service.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended (16 USC 470 *et seq.*), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the NRHP. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the NRHP. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties. The activities associated with the Proposed Action would include no new ground disturbance, no change in land use, and the use of existing conveyance features to move and store water. Reclamation has determined that there would be no potential to affect historic properties by the Proposed Action pursuant to 36 CFR 800.3(a)(1).

4.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped,

exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would be in compliance with the MBTA.

4.5 Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern.

Section 5 List of Preparers and Reviewers

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Section 6 References

- Barr, C. B. 1991. *The distribution, habitat, and status of the valley elderberry longhorn beetle, *Desmocerus californicus dimorphus**. USFWS; Sacramento, California.
- Brogan, 2006. *Testimony of Dale R. Brogan, General Manager, Delano-Earlimart Irrigation District Before the United States House of Representatives Committee on Resources Subcommittee on Water and Power*. March 24, 2006. Fresno, California.
- CNDDDB (California Natural Diversity Database). 2009. California Department of fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3. May 2, 2009.
- Collinge, S. K., M. Holyoak, C. B. Barr, and J. T. Marty. 2001. *Riparian habitat fragmentation and population persistence of the threatened valley elderberry longhorn beetle in central California*. Biological Conservation 100: 103-113.
- DEID, 2003. *Delano-Earlimart Irrigation District Groundwater Management Plan*. December, 2003.
- DWR, 2005. *California Water Plan Update 2005; Volume 3 – Regional Reports; Chapter 8: Tulare Lake Hydrologic Region*. California Department of Water Resources, September 2005.
- DWR, 2006. *California Groundwater Bulletin 118; 2003 (Updated 2006)*: http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-22.14.pdf. Accessed: 2009
- Klute, D. S., L. W. Ayers, M. T. Green, W. H. Howe, S. L. Jones, J. A. Shaffer, S. R. Sheffield, and T. S. Zimmerman. 2003. *Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States*. U.S. Department of Interior.
- Meretsky, V. and N. F. R. Snyder. 1992. *Range use and movements of California condors*. Condor 94: 313-335.
- Montanucci, R. R. 1965. *Observations on the San Joaquin leopard lizard, *Crotaphytus wislizenii silus* Stejneger*. Herpetologica 21: 270-283.

- Reclamation, 1999. *Final Programmatic Environmental Impact Statement for the Implementation of the Central Valley Project Improvement Act*, October 1999.
- Reclamation, 2001. *Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and CVC Contractors*. January, 2001. Prepared by United States Bureau of Reclamation and U.S. Fish and Wildlife Service, Sacramento, CA.
- Reclamation, 2005. *FONSI/EA-05-01: Kern-Tulare Water District and Rag Gulch Water District Groundwater Banking Project in Rosedale-Rio Bravo Water Storage District*, dated January 2005.
- Reclamation, 2006. *FONSI/EA-05-92: Accelerated Water Transfers and Exchanges, Friant Division Contractors Water Year 2006-2010*, dated March 2006.
- Reclamation, 2006a. *FONSI/EA-06-92: Delano-Earlimart Irrigation District to North Kern Water Storage District*, dated November 2006.
- Reclamation, 2009. Bureau of Reclamation Projects & Facilities. Available: <http://www.usbr.gov/projects/> Accessed: 2009.
- RRBWSD, 2001. *Final Master Environmental Impact Report: Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program*; July 2001.
- SJVAPCD, 2009. Website: <http://www.valleyair.org/aqinfo/attainment.htm>. Accessed June 8, 2009.
- USFWS. 1988. *Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Tipton Kangaroo rat*. Federal Register 53, 131: 25608-25611.
- USFWS. 1989. *Wetlands of the California Central Valley: status and trends-1939 to mid-1980's*. Portland, Oregon. 28 pp.
- USFWS. 1996. *California Condor Recovery Plan*, Third Revision. Portland, OR. 62 pp.
- USFWS. 1998. *Recovery plan for upland species of the San Joaquin Valley, California*. Portland, OR. 319 pp.
- USFWS. 2002. *Endangered and Threatened Wildlife and Plants; Endangered Status for the Buena Vista Lake shrew (Sorex ornatus relictus)*. Federal Register 67, 44: 10101-10113.
- Warrick, G. D. Clark, H. O. Kelly, P. A. Williams, D. F. and B. L. Cypher. 2007. *Use of agricultural lands by San Joaquin kit foxes*. Western North American Naturalist 67: 270-277.
- Warrick, G.D., Kato T.T., and B.R. Rose. 1998. *Microhabitat use and home range characteristics of Blunt-nosed leopard lizards*, Journal of Herpetology 32: 183-191.

Appendix A –

RECLAMATION

Managing Water in the West

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals Water Quality Monitoring Requirements



Friant-Kern Canal in Tulare County (Credit: Ted Holzem, Mintier & Associates)



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

March 7, 2008

United States Bureau of Reclamation
South-Central California Area Office
and
Friant Water Authority

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals
Water Quality Monitoring Requirements

This Policy describes the approval process, implementation procedures, and responsibilities of a Contractor requesting permission from the U.S. Bureau of Reclamation (Reclamation) to introduce non-project water into the Friant-Kern and Madera Canals, features of the Friant Division of the Central Valley Project (CVP). The monitoring requirements contained herein are intended to ensure that water quality is protected and that domestic and agricultural water users are not adversely impacted by the introduction of non-project water. The discharge of non-project water shall not in any way limit the ability of either Reclamation or the Friant Water Authority (Authority) to operate and maintain the Canals for their intended purposes nor shall it adversely impact existing contracts or any other agreements. The discharge of non-project water into the Canals will be permissible only when there is excess capacity in the system as determined by the Authority and or Reclamation.

The Contractor shall be responsible for securing other requisite Federal, State or local permits.

Reclamation, in cooperation with the Authority, will consider all proposals to convey non-project water based upon this Policy's water quality criteria and implementation procedures established in this document. Table 1 provides a summary of the Policy's water quality monitoring requirements.

This policy is subject to review and modification by Reclamation and the Authority. Reclamation and the Authority reserve the right to change the water quality monitoring requirements for any non-project water to be conveyed in the Friant-Kern and Madera Canals.

A. Types of Non-Project Water

This policy recognizes three types of non-project water with distinct requirements for water quality monitoring.

1. "Type A" Non-Project Water

Water for which analytical testing demonstrates complete compliance with California drinking water standards (Title 22)¹, plus other constituents of concern recommended by the California Department of Health Services. Type A water must be tested every year for the full list of

1. Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

constituents listed in Table 2. No in-prism (within the Canal) monitoring is required to convey Type A water.

2. **“Type B” Non-Project Water**

Water that generally complies with Title 22, but may exceed the Maximum Contaminant Level (MCL) for certain inorganic constituents of concern to be determined by Reclamation and the Authority on a case-by-case basis. This water may be discharged into the Canal over short-intervals. Type B water shall be tested every year for the full list of constituents in Table 2, and more frequently for the identified constituents of concern. Flood Water and Ground Water are Type B non-project water.

Type B water may not be pumped into the Friant-Kern Canal within a half-mile upstream of a delivery point to a CVP Municipal and Industrial contractor. At this time, there are no M & I Contractors served from the Madera Canal.

The introduction of Type B water into the Friant-Kern and Madera Canals will require regular in-prism monitoring to confirm that the CVP water delivered to downstream customers is suitable in quality for their needs. The location, frequency, and parameters of in-prism monitoring will be determined by Reclamation and the Authority on a case-by-case basis.

3. **“Type C” Non-Project Water**

Type C Water is non-project water that originates in the same source as CVP water but that has not been appropriated by the United States. For example, non-project water from a tributary within the upper San Joaquin River watershed, such as the Soquel Diversion from Willow Creek above Bass Lake, is Type C water. Another example is State Water Project water pumped from the California Aqueduct and Cross Valley Canal into the lower Friant-Kern Canal. No water quality analyses are required to convey Type C water through the Friant-Kern or Madera Canals because it is physically the same as Project water.

B. Authorization

The Warren Act (Act of February 21, 1911, ch. 141, 36 Stat. 925), as supplemented by Section 305 of Public Law 102-250, authorizes Reclamation to contract for the carriage and storage of non-project water when excess capacity is available in Federal water facilities. The terms of this Policy are also based on the requirements of the Clean Water Act (33 U.S.C. 1251 et seq.), the Endangered Species Act of 1973 (P.L. 93-205), the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. 4321 et seq.), the Reclamation Act of 1902 (June 17, 1902 as amended), and the Safe Drinking Water Act of 1974 (P.L. 93-523, amended 1986) and Title XXIV of the Reclamation Projects Authorization and Adjustments Act of 1992 (P.L. 102-575, 106 Stat 4600).

C. General Requirements for Discharge of Non-Project Water

1. Contract Requirements

A Contractor wishing to discharge non-project water into the Friant-Kern or Madera Canals must first execute a contract with Reclamation. The contract may be negotiated with Reclamation's South Central California Area Office (SCCAO) in Fresno.

2. Facility Licensing

Each non-project water discharge facility must be licensed by Reclamation and the Authority. The license for erection and maintenance of structures may be negotiated with the SCCAO.

3. Prohibition When the Canal is Empty

Non-project shall not be conveyed in the Friant-Kern or Madera Canals during periods when the canal is de-watered for maintenance.

D. Non-Project Discharge, Water Quality, and Monitoring Program Requirements

1. General Discharge Approval Requirements

Each source of non-project water must be correctly sampled, completely analyzed, and be approved by Reclamation prior to introduction into the Friant-Kern or Madera Canals. The Contractor shall pay the cost of collection and analyses of the non-project water required under this policy².

2. Water Quality Sampling and Analyses

Each source of Type A and B non-project water must be tested every year for the complete list of constituents of concern and bacterial organisms listed in Table 2. The analytical laboratory must be approved by Reclamation (Table 3).

3. Water Quality Reporting Requirements

Water quality analytical results must be reported to the Contracting Officer for review.

4. Type B Water Quality Monitoring

Reclamation will provide a Quality Assurance Project Plan (QAPP) that will describe the protocols and methods for sampling and analysis of Type B non-project water.

2. Reclamation will pay for the collection and analyses of quarterly baseline samples collected at Friant Dam and Lake Woolomes.

The program may include sampling of canal water upstream and downstream of the Contractor's discharge point into the Friant-Kern or Madera Canal. The location of samples, and the duration and frequency of sampling, and the list of constituents to be analyzed, may be changed upon review of measured trends in concentration of those constituents of concern.

E. Control of Water Quality in the Friant Division

The quality of CVP water will be considered impaired if the conveyance of the Contractor's non-project water is causing the quality of CVP water to exceed a maximum contaminant level specified in Title 22 (Table 2).

Reclamation, in consultation with the Authority, will direct the Contractor to stop the discharge of non-project water from this source into the Friant-Kern or Madera Canal.

F. Baseline Water Quality Analysis

Every four months, Reclamation will collect samples of water from the Friant-Kern Canal near Friant Dam and near Lake Woolomes. These samples will be analyzed for Title 22 and many other constituents. The purpose of these samples is to identify the baseline quality of water in the canal. No direct analysis within the Madera Canal will be conducted at this time.

The cost of this analysis will be borne by Reclamation under the CVP Baseline water quality monitoring program.

G. Water Quality Data Review and Management

All water quality data must be sent to Reclamation for review, verification, and approval. All water quality data will be entered into a database to be maintained by Reclamation. All field notes and laboratory water quality analytical reports will be kept by the Authority. All water quality data will be available upon request to the Contractor and other interested parties.

Definitions

CVP or Project water

Water that has been appropriated by the United States for the Friant Division of the CVP. The source of Project water in the Friant Division is the San Joaquin River watershed.

Non-project water

Water that has not been appropriated by the United States for the Friant Division of the CVP. This includes groundwater, and surface water from other streams and rivers that cross the Friant-Kern and Madera Canals, such as Wutchumna Ditch.

Maximum Contaminant Level

Usually reported in milligrams per liter (parts per million) or micrograms per liter (parts per billion).

Non-project discharge system

The pipe and pumps from which non-project water enters the Friant Division.

Title 22

The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

Type A water

This is non-project water that meets California drinking water standards. This water must be tested every year for the full list of Title 22 constituents. No in-stream monitoring is required to convey Type A water in the Friant Division.

Type B water

This is non-project water that has constituents that may exceed the California drinking water standards. This water must be tested every year for the full list of Title 22 constituents, plus annually for constituents of concern. Field monitoring is required of each source and of water upstream and downstream of the discharge point.

Type C water

This is non-project water from the same watershed as Project water that has not been appropriated by the United States for the Central Valley Project. Water from Soquel Creek diversion or the State Water Project are Type C water. No water quality analyses are required to convey this water in the Friant-Kern Canal.

Table 1. Water Quality Monitoring Requirements in the Friant Division
Table 2. Title 22 California Drinking Water Standards
Table 3. List of Labs Approved by Reclamation

Table 1. Water Quality Monitoring Requirements - Friant Division, Central Valley Project

Type of Water		Location	How often will a sample be collected?	What will be measured in the water?	Who will collect samples?
Project Water	Friant		January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
	Lake Woolomes		January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
Type A Non-Project Water			Every year	Title 22 and bacterial constituents (1) (2)	Contractor
Type B Non-Project Water			Every year	Title 22 and bacterial constituents (1) (2)	Contractor
			Every month (5)	Constituents of concern (5)	Contractor
			Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
Type C Non-Project Water			None required		
Project water	Upstream of each Type B discharge (4)		Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
	Downstream of each Type B discharge (4)		Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority

Notes:

(1) California Department of Health Services, California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring,

http://www.dhs.ca.gov/ps/ddwem/publications/Regulations/regulations_index.htm.

(2) Cryptosporidium, Giardia, total coliform bacteria

(3) Field measurements.

(4) Location to be determined by the Contracting Officer

(5) To be determined by the Contracting Officer, if necessary.

This water quality monitoring program is subject to change at any time by the Contracting Officer.

Revised: 08/16/2007 SCC-107

U.S. Bureau of Reclamation
 Friant Water Authority
 Friant Division, California
 Water Quality Monitoring Requirements

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
Primary Constituents (CCR § 64431)					
Aluminum	µg/L	EPA 200.7	1,000	1	7429-90-5
Antimony	µg/L	EPA 200.8	6	1	7440-36-0
Arsenic	µg/L	EPA 200.8	10	16	7440-38-2
Asbestos	MFL > 10µm	EPA 100.2	7	1	1332-21-4
Barium	µg/L	EPA 200.7	1,000	1	7440-39-3
Beryllium	µg/L	EPA 200.7	4	1	7440-41-7
Cadmium	µg/L	EPA 200.7	5	1	7440-43-9
Chromium	µg/L	EPA 200.7	50	1	7440-47-3
Cyanide	µg/L	EPA 335.4	150	1	57-12-5
Fluoride	mg/L	EPA 300.1	2	1	16984-48-8
Mercury (inorganic)	µg/L	EPA 245.1	2	1	7439-97-6
Nickel	µg/L	EPA 200.7	100	1	7440-02-0
Nitrate (as NO ₃)	mg/L	EPA 300.1	45	1	7727-37-9
Total Nitrate + Nitrite (as Nitrogen)	mg/L	EPA 353.2	10	1	
Nitrite (as Nitrogen)	mg/L	EPA 300.1	1	1	14797-65-0
Selenium	µg/L	EPA 200.8	50	1	7782-49-2
Thallium	µg/L	EPA 200.8	2	1	7440-28-0
Secondary Constituents (CCR § 64449)					
Aluminum	µg/L	EPA 200.7	200	6	7429-90-5
Chloride	mg/L	EPA 300.1	250/500/600	7	16887-00-6
Color	units	SM 2120 B	15	6	
Copper	µg/L	EPA 200.7	1,000	6	7440-50-8
Foaming agents (MBAS)	mg/L	SM 5540 C	0.5	6	
Iron	µg/L	EPA 200.7	300	6	7439-89-6
Manganese	µg/L	EPA 200.7	50	6	7439-96-5
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	5	6	1634-04-4
Odor - Threshold	threshold units	SM 2150 B	3	6	
Silver	µg/L	EPA 200.7	100	6	7440-22-4
Specific conductance (EC)	µS/cm	SM 2510 B	900/1600/2200	7	
Sulfate	mg/L	EPA 300.1	250/500/600	7	14808-79-8
Thiobencarb	µg/L	EPA 525.2	1	6	28249-77-6
Total dissolved solids (TDS)	mg/L	SM 2540 C	500/1000/1500	7	
Turbidity	NTU	EPA 180.1	5	6	
Zinc	mg/L	EPA 200.7	5	6	7440-66-6

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER		Units	Recommended Method	California DHS Maximum Contaminant Level	CAS Registry Number
Other required analyses (CCR § 64449 (b)(2); CCR § 64670)					
Bicarbonate	mg/L	SM 2320B		8	
Calcium	mg/L	SM3111B		8,12	7440-70-2
Carbonate	mg/L	SM 2320B		8	
Copper	mg/L	EPA 200.7	1.3	14	7440-50-8
Hardness	mg/L	SM 2340 B		8	
Hydroxide alkalinity	mg/L	SM 2320B		8,12	
Lead	mg/L	EPA 200.8	0.015	14	7439-92-1
Magnesium	mg/L	EPA 200.7		8	7439-95-4
Orthophosphate	mg/L	EPA 365.1		12	
pH	units	EPA 150.1		8,12	
Silica	mg/L	EPA 200.7		12	
Sodium	mg/L	EPA 200.7		8	7440-23-5
Temperature	degrees C	SM 2550		12	
Radiochemistry (CCR § 64442)					
Radioactivity, Gross Alpha	pCi/L	SM 7110C		15 3	
Microbiology					
Cryptosporidium	org/liter		No MCL, measure for presence (surface water only)		
Fecal Coliform	MPN/100ml		No MCL, measure for presence (surface water only)		
Giardia	org/liter		No MCL, measure for presence (surface water only)		
Total Coliform bacteria	MPN/100ml		No MCL, measure for presence (surface water only)		
Organic Constituents (CCR § 64444)					
EPA 504.1 method					
Dibromochloropropane (DBCP)	µg/L	EPA 504.1		0.2 4	96-12-8
Ethylene dibromide (EDB)	µg/L	EPA 504.1		0.05 4	206-93-4
EPA 505					
Chlordane	µg/L	EPA 505		0.1 4	57-74-9
Endrin	µg/L	EPA 505		2 4	72-20-8
Heptachlor	µg/L	EPA 505		0.01 4	76-44-8
Heptachlor epoxide	µg/L	EPA 505		0.01 4	1024-57-3
Hexachlorobenzene	µg/L	EPA 505		1 4	118-74-1
Hexachlorocyclopentadiene	µg/L	EPA 505		50 4	77-47-4
Lindane (gamma-BHC)	µg/L	EPA 505		0.2 4	58-89-9
Methoxychlor	µg/L	EPA 505		30 4	72-43-5
Polychlorinated biphenyls	µg/L	EPA 505		0.5 4	1336-36-3
Toxaphene	µg/L	EPA 505		3 4	8001-35-2
EPA 508 Method					
Alachlor	µg/L	EPA 508.1		2 4	15972-60-8
Atrazine	µg/L	EPA 508.1		1 4	1912-24-9
Simazine	µg/L	EPA 508.1		4 4	122-34-9

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 515.3 Method					
Bentazon	µg/L	EPA 515	18	4	25057-89-0
2,4-D	µg/L	EPA 515.1-4	70	4	94-75-7
Dalapon	µg/L	EPA 515.1-4	200	4	75-99-0
Dinoseb	µg/L	EPA 515.1-4	7	4	88-85-7
Pentachlorophenol	µg/L	EPA 515.1-4	1	4	87-86-5
Picloram	µg/L	EPA 515.1-4	500	4	1918-02-1
2,4,5-TP (Silvex)	µg/L	EPA 515.1-4	50	4	93-72-1
EPA 524.2 Method (Volatile Organic Chemicals)					
Benzene	µg/L	EPA 524.2	1	4	71-43-2
Carbon tetrachloride	µg/L	EPA 524.2	0.5	4	56-23-5
1,2-Dibromomethane	µg/L	EPA 524.2	0.05		106-93-4
1,2-Dichlorobenzene	µg/L	EPA 524.2	600	4	95-50-1
1,4-Dichlorobenzene	µg/L	EPA 524.2	5	4	106-46-7
1,1-Dichloroethane	µg/L	EPA 524.2	5	4	75-34-3
1,2-Dichloroethane	µg/L	EPA 524.2	0.5	4	107-06-2
1,1-Dichloroethylene	µg/L	EPA 524.2	6	4	75-35-4
cis-1,2-Dichloroethylene	µg/L	EPA 524.2	6	4	156-59-2
trans-1,2-Dichloroethylene	µg/L	EPA 524.2	10	4	156-60-5
Dichloromethane	µg/L	EPA 524.2	5	4	75-09-2
1,2-Dichloropropane	µg/L	EPA 524.2	5	4	78-87-5
1,3-Dichloropropene	µg/L	EPA 524.2	0.5	4	542-75-6
Ethylbenzene	µg/L	EPA 524.2	300	4	100-41-4
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	13	4	1634-04-4
Monochlorobenzene	µg/L	EPA 524.2	70	4	108-90-7
Styrene	µg/L	EPA 524.2	100	4	100-42-5
1,1,2,2-Tetrachloroethane	µg/L	EPA 524.2	1	4	79-34-5
Tetrachloroethylene (PCE)	µg/L	EPA 524.2	5	4	127-18-4
Toluene	µg/L	EPA 524.2	150	4	108-88-3
1,2,4-Trichlorobenzene	µg/L	EPA 524.2	5	4	120-82-1
1,1,1-Trichloroethane	µg/L	EPA 524.2	200	4	71-55-6
1,1,2-Trichloroethane	µg/L	EPA 524.2	5	4	79-00-5
Trichloroethylene (TCE)	µg/L	EPA 524.2	5	4	79-01-6
Trichlorofluoromethane	µg/L	EPA 524.2	150	4	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA 524.2	1,200	4	76-13-1
Total Trihalomethanes	ug/L	EPA 524.2	80	10	
Vinyl chloride	µg/L	EPA 524.2	0.5	4	75-01-4
Xylene(s)	µg/L	EPA 524.2	1,750	4	1330-20-7
EPA 525.2 Method					
Benzo(a)pyrene	µg/L	EPA 525.2	0.2	4	50-32-8
Di(2-ethylhexyl)adipate	µg/L	EPA 525.2	400	4	103-23-1
Di(2-ethylhexyl)phthalate	µg/L	EPA 525.2	4	4	117-81-7
Molinate	µg/L	EPA 525.2	20	4	2212-67-1
Thiobencarb	µg/L	EPA 525.2	70	4	28249-77-6
EPA 531.1 Method					
Carbofuran	µg/L	EPA 531.1-2	18	4	1563-66-2
Oxamyl	µg/L	EPA 531.1-2	50	4	23135-22-0

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 547 Method					
Glyphosate	µg/L	EPA 547	700	4	1071-83-6
EPA 548.1 Method					
Endothal	µg/L	EPA 548.1	100	4	145-73-3
EPA 549.2 Method					
Diquat	µg/L	EPA 549.2	20	4	85-00-7
EPA 613 Method					
2,3,7,8-TCDD (Dioxin)	µg/L	EPA 1613	0.00003	4	1746-01-6

Source Data:

Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board.

U.S. Bureau of Reclamation
 Friant Water Authority
 Friant Division, California
 Water Quality Monitoring Requirements

Table 2b. Unregulated Chemicals (CCR § 64450)

			California Department of Health Services				CAS
CONSTITUENT OR PARAMETER	Units	Recommended Method	Notification Level		Response Level	Registry Number	
Boron	mg/L	EPA 200.7	1	9, 17	10	7440-42-8	
n-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	104-51-8	
sec-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	135-98-8	
tert-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	98-06-6	
Carbon disulfide	µg/L		160	17	1,600		
Chlorate	µg/L	EPA 300.1	0.8	17	8		
2-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	95-49-8	
4-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	106-43-4	
Dichlorofluoromethane (Freon 12)	µg/L	EPA 524.2	1,000	9,17	10,000	75-43-4	
1,4-Dioxane	µg/L	SM 8270	3	17	300	123-91-1	
Ethylene glycol	µg/L	SM 8015	1,400	17	14,000	107-21-1	
Formaldehyde	µg/L	SM 6252	100	17	1,000	50-00-0	
n-Propylbenzene	µg/L		260	17	2,600		
HMX	µg/L	SM 8330	350	17	3,500	2691-41-0	
Isopropylbenzene	µg/L		770	17	7,700		
Manganese	mg/L		1	17	5		
Methyl isobutyl ketone	µg/L		120	17	1,200		
Napthalene	µg/L	EPA 524.2	17	17	170	91-20-3	
n-nitrosodiethylamine (NDEA)	µg/L	1625	0.01	17	0.1		
n-nitrosodimethylamine (NDMA)	µg/L	1625	0.01	17	0.2		
n-nitroso-n-propylamine (NDPA)	µg/L	1625	0.01	17	0.5		
Perchlorate	µg/L	EPA 314	6	9, 17	60	13477-36-6	
Propachlor	µg/L	EPA 507 or 525	90	17	900	1918-16-7	
p-Isopropyltoluene	µg/L	EPA 524.2	770	17	7,700	99-87-6	
RDX	µg/L	SM 8330	0.30	17	30	121-82-4	
tert-Butyl alcohol (ethanol)	µg/L	EPA 524.2	12	9,17	1,200	75-65-0	
1,2,3-Trichloropropane (TCP)	ug/L	EPA 524.2	0.005	9,17	0.5	96-18-4	
1,2,4-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6	
1,3,5-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6	
2,4,6-Trinitrotoluene (TNT)	µg/L	SM 8330	1	17	100		
Vanadium	mg/L	EPA 286.1	0.05	9,17	0.5	7440-62-2	

Revised: 05/17/2007

**U.S. Bureau of Reclamation
Friant Water Authority
Friant Division, California
Water Quality Monitoring Requirements**

Notes for Tables 2a and 2b

Title 22. California Code of Regulations, California Safe Drinking Water Act and Related Laws and Regulations. February 2007.
<http://www.dhs.ca.gov/ps/ddwem/publications/lawbook/PDFs/dwregulations-02-06-07.pdf>

- [1] Table 64431-A. Maximum Contaminant Levels, Inorganic Chemicals
- [2] Table 64432-A. Detection Limits for Purpose of Reporting (DLRs) for Regulated Inorganic Chemicals
- [3] Table 64442. Radionuclide Maximum contaminant Levels (MCLs) and Detection Levels for Reporting (DLRs)
- [4] Table 64444-A. Maximum Contaminant Levels Organic Chemicals
- [5] Table 64445.1-A. Detection Limits for Reporting (DLRs) for Regulated Organic Chemicals
- [6] Table 64449-A. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
- [7] Table 64449-B. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
- [8] § 64449(b)(2)
- [9] Table 64450. Unregulated Chemicals
- [10] Appendix 64481-A. Typical Origins of Contaminants with Primary MCLs
- [11] Table 64533-A. Maximum Contaminant Levels and Detection Limits for Reporting Disinfection Byproducts
- [12] § 64670.(c)
- [13] Table 64678-A. DLRs for Lead and Copper
- [14] § 64678 (d)
- [15] § 64678 (e)
- [16] New Federal standard as of 1/23/2006
- [17] Dept Health Services Drinkig Water Notification Levels (June 2006)

RECLAMATION

Managing Water in the West

Table 3. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch (MP-157)

Basic Laboratory	<u>Address</u>	2218 Railroad Avenue Redding, CA 96001 USA
	<u>Contact</u>	Nathan Hawley, Melissa Hawley, Ricky Jensen
	<u>P/F</u>	(530) 243-7234 / (530) 243-7494
	<u>Email</u>	nhawley@basiclab.com (QAO), mhawley@basiclab.com (PM), jcady@basiclab.com (quotes), poilar@basiclab.com (sample custody), khawley@basiclab.com (sample custody)
	<u>CC Info</u>	nhawley@basiclab.com, jcady@basiclab.com (sample custody)
	<u>Methods</u>	<i>Approved only for inorganic parameters (metals, general chemistry)</i>
BioVir Analytical Laboratories	<u>Address</u>	685 Stone Road Unit 6 Benicia, CA 94510 USA
	<u>Contact</u>	Rick Danielson, Lab Director
	<u>P/F</u>	(707) 747-5906 / (707) 747-1751
	<u>Email</u>	red@biovir.com, csj@biovir.com, lb@biovir.com, QAO Jim Truscott jrt@biovir.com
	<u>Methods</u>	<i>Approved for all biological and pathogenic parameters</i>
Block Environmental Services	<u>Address</u>	2451 Estand Way Pleasant Hill, CA 94523 USA
	<u>Contact</u>	David Block
	<u>P/F</u>	(925) 682-7200 / (925) 686-0399
	<u>Email</u>	dblock@blockenviron.com
	<u>Methods</u>	<i>Approved for Toxicity Testing.</i>
California Laboratory Services	<u>Address</u>	3249 Fitzgerald Road Rancho Cordova, CA 95742
	<u>Contact</u>	Raymond Osowski
	<u>P/F</u>	(916) 638-7301 / (916) 638-4510
	<u>Email</u>	rayo@californialab.com
	<u>Methods</u>	<i>Approved for Chromium VI</i>
Caltest Analytical Laboratory	<u>Address</u>	1885 North Kelly Road Napa, CA 94558
	<u>Contact</u>	Bill Svoboda, Project Manager x29
	<u>P/F</u>	(707) 258-4000 / (707) 226-1001
	<u>Email</u>	bsvoboda@caltestlab.com
	<u>Methods</u>	<i>Approved for all inorganic parameters and biological parameters</i>
Columbia Environmental Resource Center	<u>Address</u>	4200 New Haven Road Columbia, MO 65201 USA
	<u>Contact</u>	Tom May, Research Chemist
	<u>P/F</u>	(573) 876-1858 / (573) 876-1896
	<u>Email</u>	tmay@usgs.gov
	<u>Methods</u>	<i>Approved for mercury in biological tissue</i>
Data Chem Laboratories	<u>Address</u>	960 West LeVoy Drive Salt Lake City, UT 84123-2547 USA
	<u>Contact</u>	Bob DiRienzo, Kevin Griffiths-Project Manager, Rand Potter - Project Manager, asbestos
	<u>P/F</u>	(801) 266-7700 / (801) 268-9992
	<u>Email</u>	griffiths@datachem.com, Potter@datachem.com Invoicing: (Justin) pate@datachem.com
	<u>Methods</u>	<i>Approved for asbestos, metals, organochlorine pesticides and PCBs in solids</i>
Dept. of Fish & Game - WPCL	<u>Address</u>	2005 Nimbus Road Rancho Cordova, CA 95670 USA
	<u>Contact</u>	David B. Crane
	<u>P/F</u>	(916) 358-2858 / (916) 985-4301
	<u>Email</u>	dcrane@ospr.dfg.ca.gov
	<u>Methods</u>	<i>Approved only for metals analysis in tissue.</i>
Frontier Geosciences	<u>Address</u>	414 Pontius North Seattle, WA 98109 USA
	<u>Contact</u>	Shelly Fank - QA Officer, Matt Gomes-Project Manager
	<u>P/F</u>	(206) 622-6960 / (206) 622-6870
	<u>Email</u>	shellyf@frontiergeosciences.com, mattg@frontiergeosciences.com
	<u>Methods</u>	<i>in low level metals analysis.</i>

Fruit Growers Laboratory	<u>Address</u>	853 Corporation Street Santa Paula, CA 93060 USA
	<u>Contact</u>	David Terz, QA Director
	<u>P/F</u>	(805) 392-2024 / (805) 525-4172
	<u>Email</u>	davidt@fglinc.com
	<u>Methods</u>	<i>Approved for all inorganic and organic parameters in drinking water.</i>
Montgomery Watson/Harza Laboratories	<u>Address</u>	750 Royal Oaks Drive Ste. 100 Monrovia, CA 91016 USA
	<u>Contact</u>	Allen Glover (project manager), Bradley Cahoon (quotes)
	<u>P/F</u>	(916) 374-8030, 916-996-5929 (AG-cell) / (916) 374-8061
	<u>Email</u>	Allen.Glover@us.mwhglobal.com, Bradley.Cahoon@us.mwhglobal.com
	<u>CC Info</u>	cc. Sam on all communications to Allen. Samer.Momani@us.mwhglobal.com
Olson Biochemistry Laboratories	<u>Address</u>	SDSU: Box 2170, ACS Rm. 133 Brookings, SD 57007 USA
	<u>Contact</u>	Nancy Thiex, Laboratory Director
	<u>P/F</u>	(605) 688-5466 / (605) 688-6295
	<u>Email</u>	Nancy.Thiex@sdstate.edu
	<u>CC Info</u>	For re-analysis: contact Zelda McGinnis-Schlobohm and Nancy Anderson Zelda.Schlobohm@SDSTATE.EDU, Nancy.Anderson@SDSTATE.EDU For analysis questions only: just CC. Nancy Anderson
Severn Trent Laboratories	<u>Address</u>	880 Riverside Parkway West Sacramento, CA 95605 USA
	<u>Contact</u>	Jeremy Sadler
	<u>P/F</u>	(916) 374-4381 / (916) 372-1059
	<u>Email</u>	jsadler@stl-inc.com
	<u>Methods</u>	<i>Approved for all inorganic parameters and hazardous waste organics except for Ammonia as Nitrogen . Ag analysis in sediment, when known quantity is present, request 6010B</i>
Sierra Foothill Laboratory, Inc.	<u>Address</u>	255 Scottsville Blvd, Jackson, CA 95642
	<u>Contact</u>	Sandy Nurse (Owner) or Dale Gimble (QA Officer)
	<u>P/F</u>	(209) 223-2800 / (209) 223-2747
	<u>Email</u>	sandy@sierralab.com, CC: dale@sierralab.com
	<u>Methods</u>	<i>Approved for all inorganic parameters, microbiological parameters, acute and chronic toxicity.</i>
Twining Laboratories, Inc.	<u>Address</u>	2527 Fresno Street Fresno, CA 93721 USA
	<u>Contact</u>	Jim Brownfield (QA Officer), Sample Control (for Bottle Orders)
	<u>P/F</u>	(559) 268-7021 / (559) 268-0740
	<u>Email</u>	JimB@twining.com cc. to JosephU@twining.com
	<u>Methods</u>	<i>Approved only for general chemistry and boron analysis.</i>
U.S. Geological Survey - Denver	<u>Address</u>	Denver Federal Center Building 20, MS 973 Denver, CO 80225 USA
	<u>Contact</u>	Stephen A. Wilson
	<u>P/F</u>	(303) 236-2454 / (303) 236-3200
	<u>Email</u>	swilson@usgs.gov
	<u>Methods</u>	<i>Approved only for inorganic parameters in soil .</i>
USBR Technical Service Center Denver Soils	<u>Address</u>	Denver Federal Center Building 67, D-8750 Denver, CO 80225-0007 USA
	<u>Contact</u>	Juli Fahy or Stan Conway
	<u>P/F</u>	(303) 445-2188 / (303) 445-6351
	<u>Email</u>	jfahy@do.usbr.gov
	<u>Methods</u>	<i>Approved only for general physical analysis in soils.</i>
Western Environmental Testing Laboratories	<u>Address</u>	475 East Greg Street # 119 Sparks, NV 89431 USA
	<u>Contact</u>	Ginger Peppard (Customer Service Manager), Andy Smith (Lab Director), Michelle Kramer
	<u>P/F</u>	(775) 355-0202 / (775) 355-0817
	<u>Email</u>	ginger@WETLaboratory.com, andy@WETLaboratory.com, michelle@WETLaboratory.com
	<u>Methods</u>	<i>Approved only for inorganic parameters (metals, general chemistry).</i>

Revised: 04/16/2007 MP-157

Appendix B -

AGREEMENT

This Agreement is made and entered into this 1st day September, 2009 by and between The FRIANT WATER AUTHORITY (“FWA”) and DELANO-EARLIMART IRRIGATION DISTRICT (Delano-Earlimart).

W I T N E S S E T H:

WHEREAS, the FWA operates the Friant-Kern Canal (Canal); and

WHEREAS, Delano-Earlimart desires to introduce previously banked Central Valley Project (Project) water into the Canal through the interconnection with the Cross Valley Canal (CVC); and

WHEREAS, FWA, as the operating non-federal entity, is willing to facilitate the return of said water in compliance with United State Bureau of Reclamation’s (Reclamation) approval criteria.

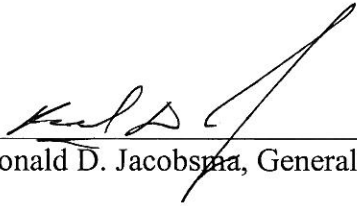
NOW, THEREFORE, IT IS BE IT RESOLVED as follows:

1. The term of this Agreement is effective from February 1, 2009 through February 28, 2026.
2. Delano-Earlimart shall provide the FWA with schedule(s) at least 24 hours in advance of all proposed deliveries into and diversions from the Canal. Such schedule(s) shall be subject to approval by FWA.
3. FWA shall accept only Project water into the Canal from Delano-Earlimart f for direct delivery or by exchange to one or more of the Friant Division long-term water service contracting members (Exchangers) located within various reaches of the Canal where said return water is introduced. Such Exchangers (s) will be identified by the FWA on a periodic basis with their accounting.
4. FWA shall: (a) account for the volume of previously banked Project water that Delano-Earlimart delivers into the Canal and is delivered by direct delivery or by exchange and (b) limit Delano-Earlimart deliveries under this Agreement to such volume.

5. The terms for the delivery of water into the Canal shall be consistent with terms required by Reclamation and related compliance documents including water quality monitoring and environmental compliance among other approval criteria required by Reclamation.

IN WITNESS WHEREOF, the FWA and Delano-Earlimart have executed this Agreement on the day and year first hereinabove written.

FRIANT WATER AUTHORITY

By: 
Ronald D. Jacobs, General Manager

DELANO-EARLIMART

IRRIGATION DISTRICT

By: 
Dale R. Brogan, General Manager